

*Filed 17 August 2007*

**AMENDMENTS TO THE CLAIMS:**

Please amend claims 1, 3, 4, 8, 19, 32 and 41, as follows.

This listing of claims will replace all prior versions and listings of claims in the Application:

**Claim 1 (currently amended):** A storage device, comprising:

a write head that encodes strands of molecular material with sequences of binary data;  
a storage block for storing the strands;  
a read head for reading out a sequence of binary data from a selected strand; and  
a transport mechanism that selectively moves the strands between the ~~read and write~~ headshead and the storage block, or in response to a read command, between the storage dock and the read head, and then to a dump or back to the storage block.

**Claim 2 (original):** The storage device of claim 1, wherein the strand includes a number of molecular bases that are encoded with the binary data, said read head detecting each base or collection of the bases within the strand to read out the binary data directly from the strand.

**Claim 3 (currently amended):** The storage device of claim 2, wherein the read head comprises:

~~First~~ first and second chambers, which have a shared wall and contain a liquid,  
[[A]] a nano-pore in the shared wall;  
[[A]] a voltage source that applies a voltage across said first and second chambers thereby producing an ionic current that flows through the nano-pore and pulling strands through the nano-pore as they are presented to the first chamber; and  
[[A]] a current meter that measures fluctuations in the ionic current as each base or collection of bases in the strand flows through the nano-pore.

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Filed 31 October 2007

AMENDMENTS TO THE CLAIMS:

Please amend claims 1, 3, 4, 8, 19, 32-41, 68, and 74-80, as follows.

This listing of claims will replace all prior versions and listings of claims in the

Application:

**Claim 1 (currently amended):** A storage device, comprising:

a write head that encodes strands of molecular material with sequences of binary data;

a storage block for storing the strands;

a read head for reading out a sequence of binary data from a selected strand; and

a transport mechanism that selectively moves the strands between the ~~read and write~~ headshead and the storage block, or in response to a read command, between the storage dock and the read head, and then to a dump or back to the storage block.

**Claim 2 (original):** The storage device of claim 1, wherein the strand includes a number of molecular bases that are encoded with the binary data, said read head detecting each base or collection of the bases within the strand to read out the binary data directly from the strand.

**Claim 3 (currently amended):** The storage device of claim 2, wherein the read head comprises:

First first and second chambers, which have a shared wall and contain a liquid,

[[A]] a nano-pore in the shared wall;

[[A]] a voltage source that applies a voltage across said first and second chambers thereby producing an ionic current that flows through the nano-pore and pulling strands through the nano-pore as they are presented to the first chamber; and

[[A]] a current meter that measures fluctuations in the ionic current as each base or collection of bases in the strand flows through the nano-pore.

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